

AMENDMENTS TO THE CLAIMS

Claims 9-34 are pending in this application. Claims 9, 14-16 and 18-30 are being amended.

New claims 35 and 36 are being added.

After the amendments, claims 9-36 will be pending.

This list of claims replaces any and all prior listings:

Listing of Claims:

- 1.-8. (Canceled)
9. (Currently amended) A ~~An isolated~~ cell comprising a ~~polypeptide~~ methionine aminopeptidase that comprises an engineered version of SEQ ID NO:1, wherein residue 206 or 233 of SEQ ID NO:1 is substituted with an amino acid selected from the group consisting of Gly, Thr, Asp, Val and Asn, and wherein the methionine aminopeptidase is at least about 90% identical to SEQ ID NO:1 outside of residues 168, 206 and 233.
10. (Original) The cell of claim 9 that is a bacterial cell.
11. (Original) The cell of claim 9 that is an *E. coli*.
12. (Original) The cell of claim 9 that is an *E. coli* BL21(DE3) cell.
13. (Original) The cell of claim 9 that is a eukaryotic cell.
14. (Currently amended) ~~A DNA~~ An isolated nucleic acid molecule comprising a sequence that encodes a ~~polypeptide~~ methionine aminopeptidase that comprises an engineered version of SEQ ID NO:1, wherein residue 206 or 233 of SEQ ID NO:1 is substituted with an amino acid selected from the group consisting of Gly, Thr, Asp, Val and Asn, and wherein the methionine aminopeptidase is at least about 90% identical to SEQ ID NO:1 outside of residues 168, 206 and 233.

15. (Currently amended) The ~~DNA~~ nucleic acid molecule of claim 14 that is an expression vector.
16. (Currently amended) A cell comprising the ~~DNA~~ nucleic acid molecule of claim 14.
17. (Withdrawn) A method of removing the N-terminal methionine from a target protein, comprising contacting the target protein with the polypeptide of claim 1 under conditions that result in removal of the N-terminal methionine from the target protein.
18. (Withdrawn-currently amended) ~~The method of claim 17~~ A method of removing the N-terminal methionine from a target protein, comprising introducing a ~~DNA that encodes the polypeptide~~ the nucleic acid of claim 14 into a cell, wherein the cell comprises a DNA that encodes the target protein.
19. (Withdrawn-currently amended) ~~The method of claim 17~~ A method of removing the N-terminal methionine from a target protein, comprising introducing into a cell a ~~DNA that encodes the polypeptide~~ the nucleic acid of claim 14 and a DNA that encodes the target protein.
20. (Withdrawn-currently amended) ~~The method of claim 17~~ A method of removing the N-terminal methionine from a target protein, comprising introducing into a cell a ~~DNA that encodes both the target protein and the polypeptide~~ the nucleic acid of claim 14, wherein the nucleic acid also encodes the target protein.
21. (Withdrawn-currently amended) The method of claim ~~17~~ 18 wherein the amino acid residue next to the N-terminal methionine in the target protein is selected from the group consisting of Gln, Asn, Leu, Ile, Met and His.
22. (Withdrawn-currently amended) The method of claim ~~17~~ 18 wherein the amino acid residue next to the N-terminal methionine in the target protein is selected from the group consisting of Phe, Tyr and Trp.

23. (Withdrawn-currently amended) The method of claim ~~17~~ 18 wherein the amino acid residue next to the N-terminal methionine in the target protein is selected from the group consisting of Asp and Glu.
24. (Currently amended) The ~~DNA~~ nucleic acid molecule of claim 14 wherein residue 233 of the polypeptide is substituted with Gly or Thr.
25. (Currently amended) The ~~DNA~~ nucleic acid molecule of claim 14 wherein residue 206 of the polypeptide is substituted with Gly, Thr or Val.
26. (Currently amended) The ~~DNA~~ nucleic acid molecule of claim 14 wherein both residues 206 and 233 of the polypeptide are substituted.
27. (Currently amended) The ~~DNA~~ nucleic acid molecule of claim 14 wherein the polypeptide comprises the following substitutions at residues 206 and 233:
- (a) residue 206 is substituted with Gly and residue 233 is substituted with Gly;
 - (b) residue 206 is substituted with Thr and residue 233 is substituted with Gly;
 - (c) residue 206 is substituted with Thr and residue 233 is substituted with Thr; or
 - (d) residue 206 is substituted with Val and residue 233 is substituted with Thr.
28. (Currently amended) The ~~DNA~~ nucleic acid molecule of claim 14 wherein the polypeptide further comprises a substitution at residue 168 of SEQ ID NO:1.
29. (Currently amended) The ~~DNA~~ nucleic acid molecule of claim 28 wherein residue 168 of the polypeptide is substituted with an amino acid selected from the group consisting of Gly, Ser, Thr, Val, Asp and Glu.
30. (Currently amended) The ~~DNA~~ nucleic acid molecule of claim 28 wherein residue 168 of the polypeptide is substituted with Gly or Thr.
31. (Previously presented) The cell of claim 16 that is a bacterial cell.
32. (Previously presented) The cell of claim 16 that is an *E. coli*.

33. (Previously presented) The cell of claim 16 that is an *E. coli* BL21(DE3) cell.
34. (Previously presented) The cell of claim 16 that is a eukaryotic cell.
35. (New) The cell of claim 9 wherein the methionine aminopeptidase is at least 95% identical to SEQ ID NO:1 outside of residues 168, 206 and 233.
36. (New) The nucleic acid molecule of claim 14 wherein the methionine aminopeptidase is at least 95% identical to SEQ ID NO:1 outside of residues 168, 206 and 233.